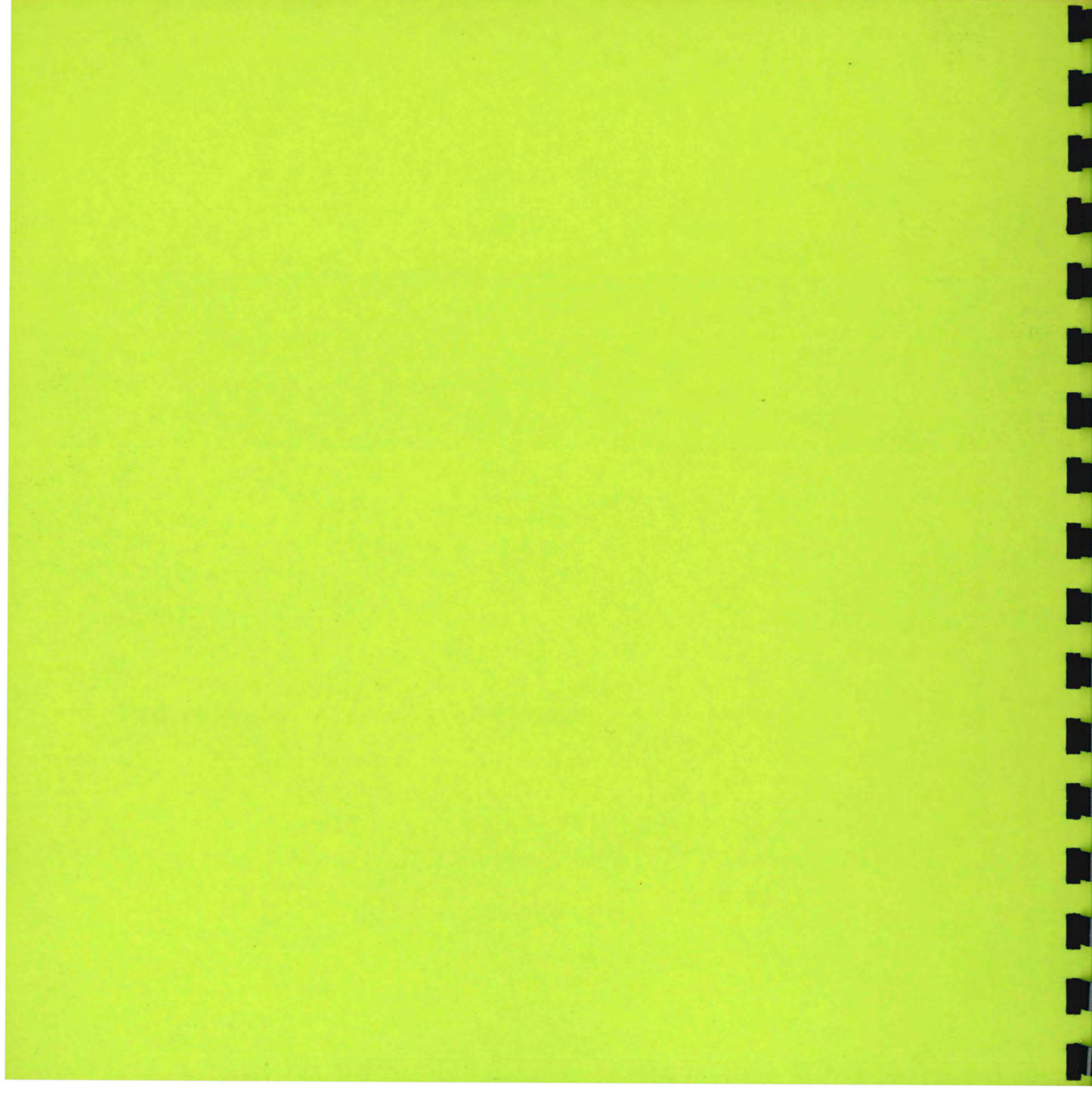


An aerial photograph of a dense, lush green forest canopy, showing a variety of tree species and a thick layer of foliage. The text "Bates Woods Park" is overlaid in a large, bold, white serif font, centered on the right side of the image. The left edge of the image shows the spiral binding of a notebook.

Bates Woods Park



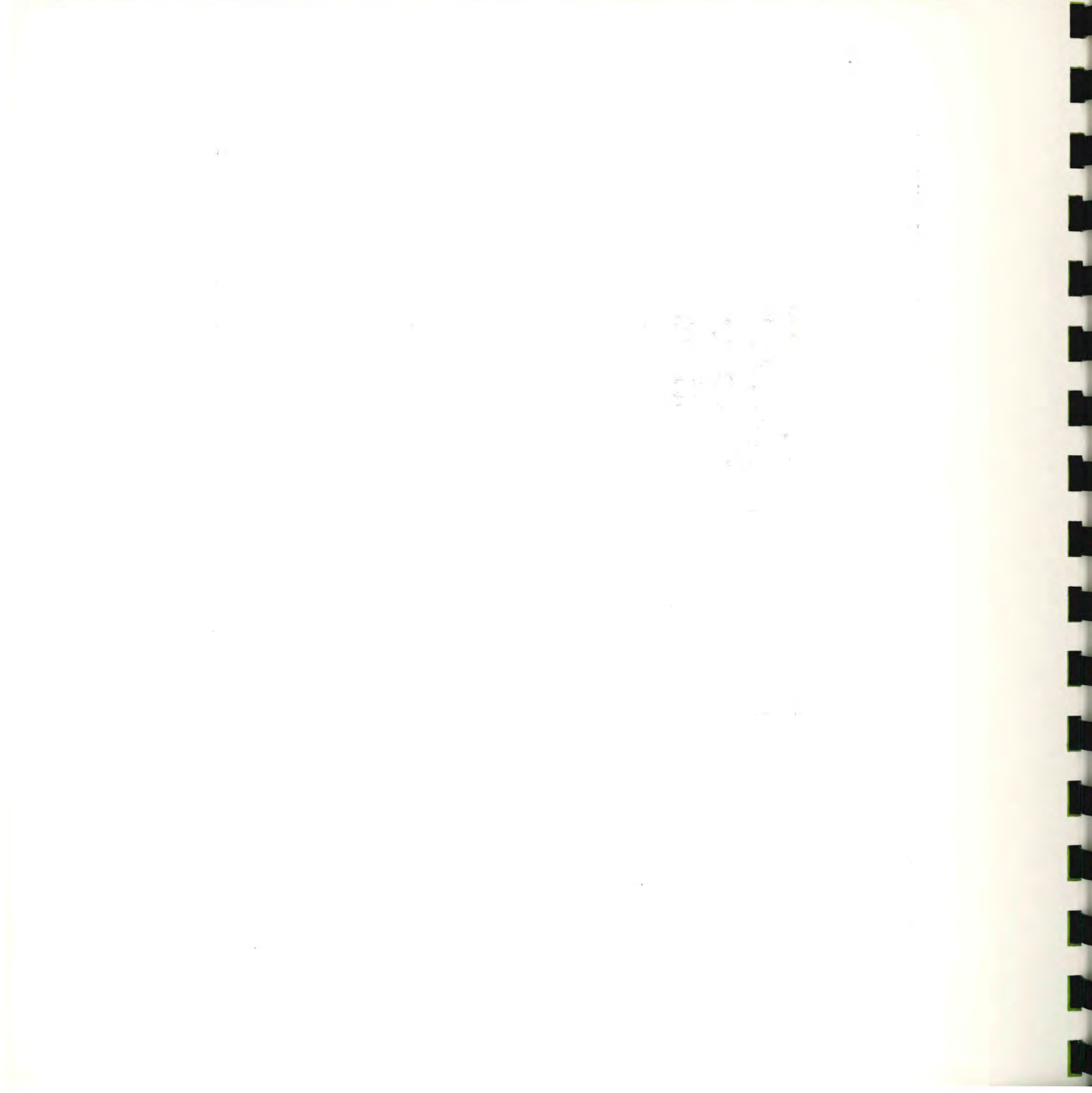
Bates Woods Park

Master Plan

New London, Connecticut

Raymond, Parish, Pine & Weiner, Inc.
Tarrytown, N.Y. Hamden, Conn.

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Introduction

Bates Woods Park is one of New London's finest resources. Although it is perhaps best known as the location of the Herbert Moran Zoo and the city's sanitary landfill, the 85-acre park also encompasses dense woods, hidden meadows, natural swamps and bogs, sharp ridges, and scenic rock outcrops.

With the exception of the zoo and its neighboring picnic and recreation areas, the park is not maintained and is largely unused for recreation. The prime obstacle to the park's full use in the past has been the sanitary landfill site. However, the landfill operation is currently being phased out by the city. This will open up new recreation potential in Bates Woods Park, since the large landfill area can provide an excellent site for expanded recreation activities.

The plans presented in this report show how Bates Woods Park might fulfill its potential and provide an outstanding recreational resource for the citizens of New London.



The pine grove and picnic area at the zoo is one of Bates Wood's most attractive areas.



Existing playground near the zoo, set in an excellent group of trees.



One of the three group picnic pavilions near the zoo.



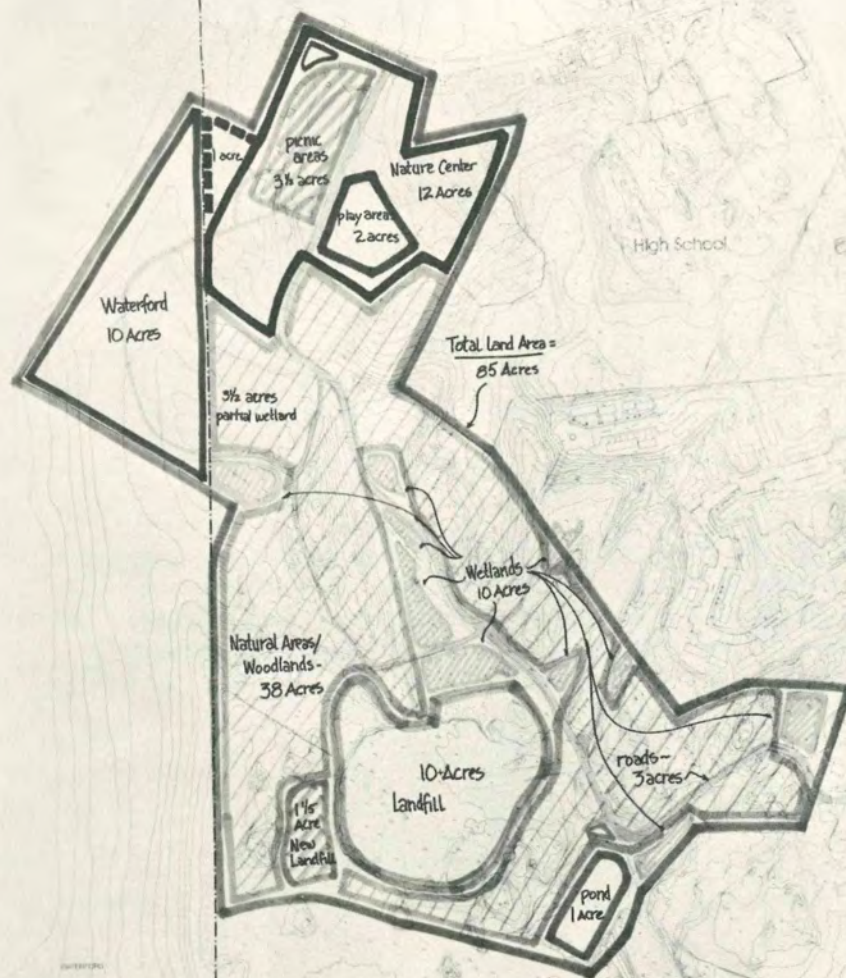
The existing softball field is located next to the zoo's animal pens and monkey house.

The Existing Uses

Bates Woods Park encompasses a total of 85 acres. Seventy-five acres are located within New London, ten acres are within the bordering town of Waterford. There are currently two active uses in the park: The Herbert Moran Zoo and adjacent playgrounds, ball field, and picnic areas at the northern end of the park, and the New London Sanitary Landfill (which the city is phasing out) in the southern portion of the park. (See Map 1.)

The remainder of the park (approximately 60 acres) contains natural wooded areas, swamps, rock outcrops, and a few ponds. The remnants of hiking trails and picnic sites built under the WPA program can still be found in many portions of the park, although most of the trails and sites are overgrown. (See Map 2.)

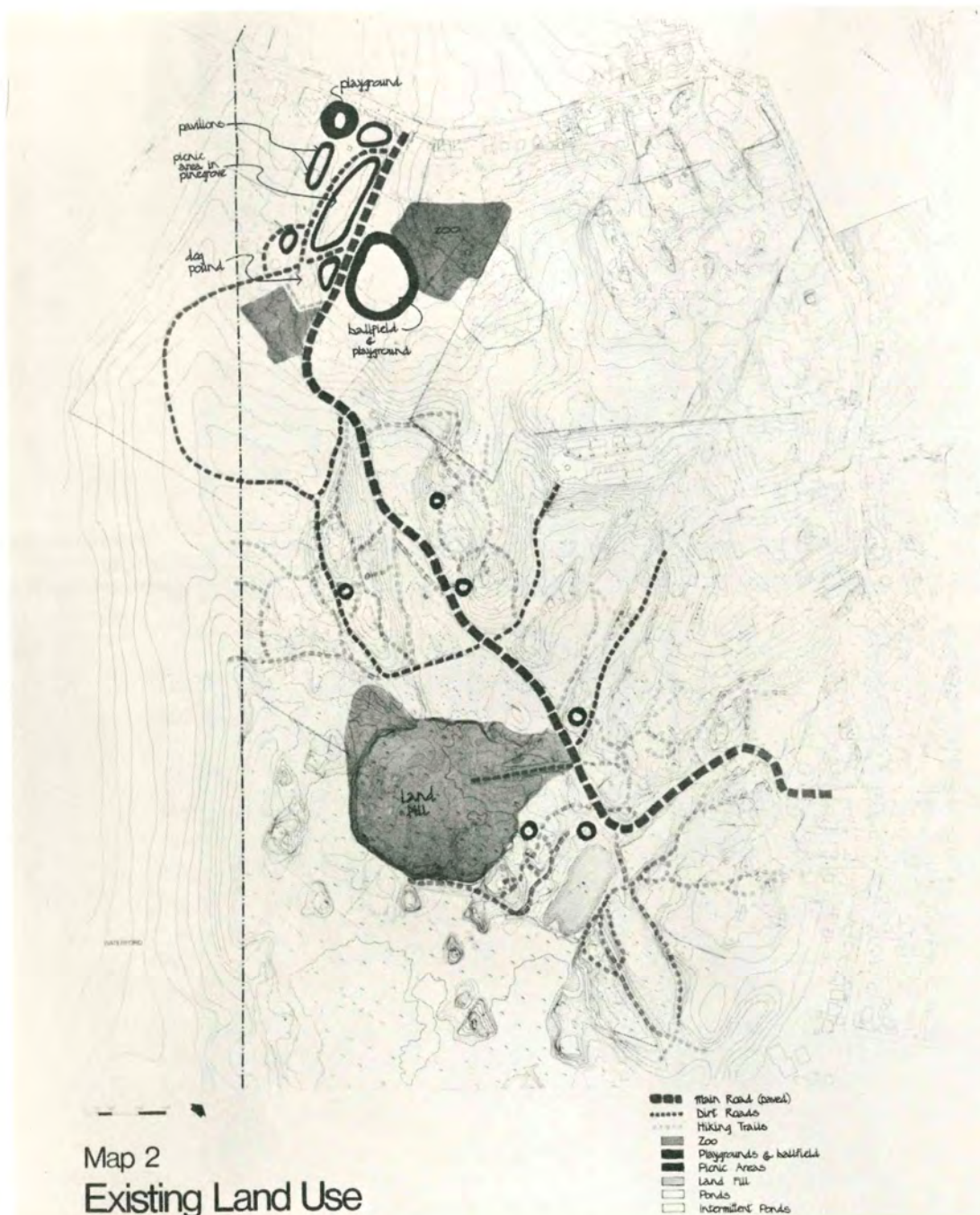
Bates Woods Park is an outstanding and unusual urban resource. In addition to a zoo, related picnic areas and playgrounds, the park encompasses over 50 acres of natural woods, swamps, meadows and ponds.



Map 1
Land Areas

Total Park Acreage	- 85
Waterford	- 10
New London	- 75
Nature Center/Zoo	- 12
Landfill	- 10
Nature Landfill	- 1
Roads	- 3
Pond	- 1
Wetlands	- 10
Natural Areas/Woodlands	- 38

Although the focal point of the park is the zoo, the remnants of once-scenic hiking trails still climb the ridges and meander through the valleys in the surrounding woods. The southern portion of the park is dominated by the city's 12-acre sanitary landfill.





The swampy areas are among the park's fine environmental features.



Rocky ledges separate the often swampy valleys.

The Existing Landscape

The land in Bates Woods Park slopes away from a high point at the zoo to a large, low swampy area on the southern side of the landfill. Several small valleys drain from the higher portions of the park into this area. (As a result of being blocked by the landfill which covers a portion of this low-lying area, one of the valleys now contains a small, potentially pleasant pond.) A drainage problem in the northern portion of the park results from unregulated excessive run-off from developments across Chester Street and in Waterford. This water flow has washed out portions of roads and caused other erosion within the park. (See Maps 3 and 5.)

The park includes some of the most varied and spectacular topography in the New London area. The small valleys are punctuated by steep ridges crowned with scenic rock outcrops. High points along these ridges offer hikers superb views of the surrounding area. (See Maps 4, 7 and 8.)

With the exception of the zoo (which is excellently landscaped) and the landfill area, Bates Woods Park is heavily forested; the low-lying valleys have thick woods with heavy undergrowth, while on the hillsides, the forests and undergrowth are somewhat lighter. Secluded clearings and meadows are scattered throughout the woods. The dense undergrowth and scrub vegetation can be a problem, since it hides and chokes out potentially large or valuable trees. (See Map 9.)

Bates Woods Park's spectacular landscape results in large part from the area's topography. Elevations in the park range from less than 50 feet above sea level in the southern portion of the park to over 150 feet above sea level at the zoo.



Steep slopes (often in excess of 25%) rise out of the valley floors to form a series of prominent linear ridges in the central portion of the park.

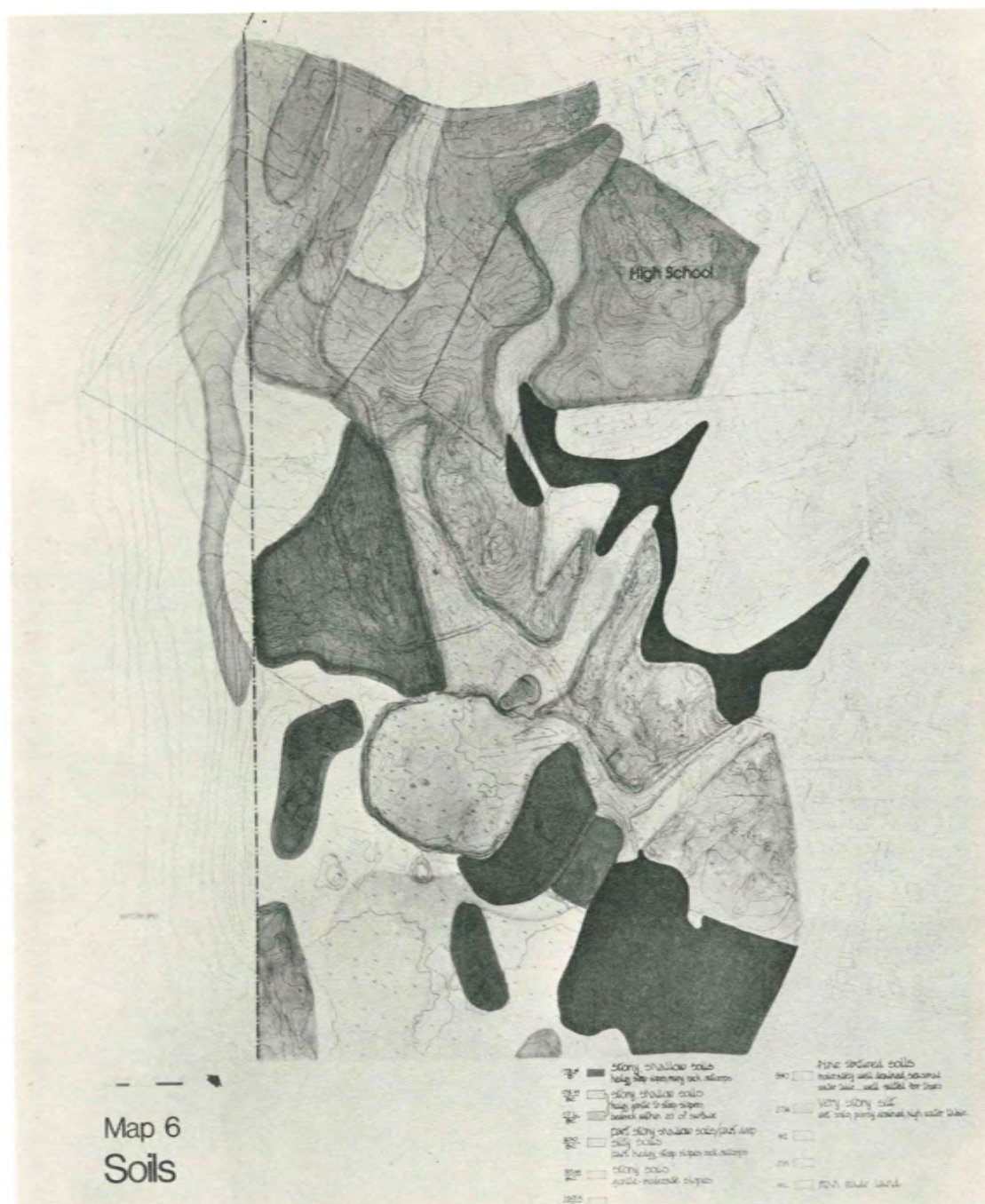


Small valleys lying between the linear ridges contain intermittent streams, small ponds, and bogs. These small valleys drain into a large swamp south of the landfill area.



Shallow, stony soils, often combined with steep slopes, form the dramatic ridges found in the park. Silty, poorly drained soils are found in the valleys and swamps.

Rock outcrops cap the narrow ridges, creating Bates Woods' most outstanding scenery.



The most picturesque sections of the park are found in its center, where ridges alternate with low, boggy valleys. The high points on these ridges offer hikers views of the surrounding area.



Dense forests with heavy undergrowth are found in the park's many valleys, while on the hillsides the trees and undergrowth are lighter. The trees in Bates Woods are deciduous, with the exception of the pine grove at the zoo.





*The park's wooded ridges
comprise some of the most
spectacular scenery in the
new land region.*



*Remnants of trails and
paths still meander
through the woods,
although many are over-
grown.*

The Design Opportunities

Bates Woods Park contains many unexplored opportunities. The park has great potential for active recreation, yet offers the city a wilderness within its boundaries. The most successful development of the park will be one that adapts to the area's natural features by making the most of the ridges and valleys that connect the zoo with the landfill site.

Preservation of the existing natural woodlands, bogs and marshes should be given high priority in the park's development.

In addition to the natural areas, two sections of the park are well suited to active recreation:

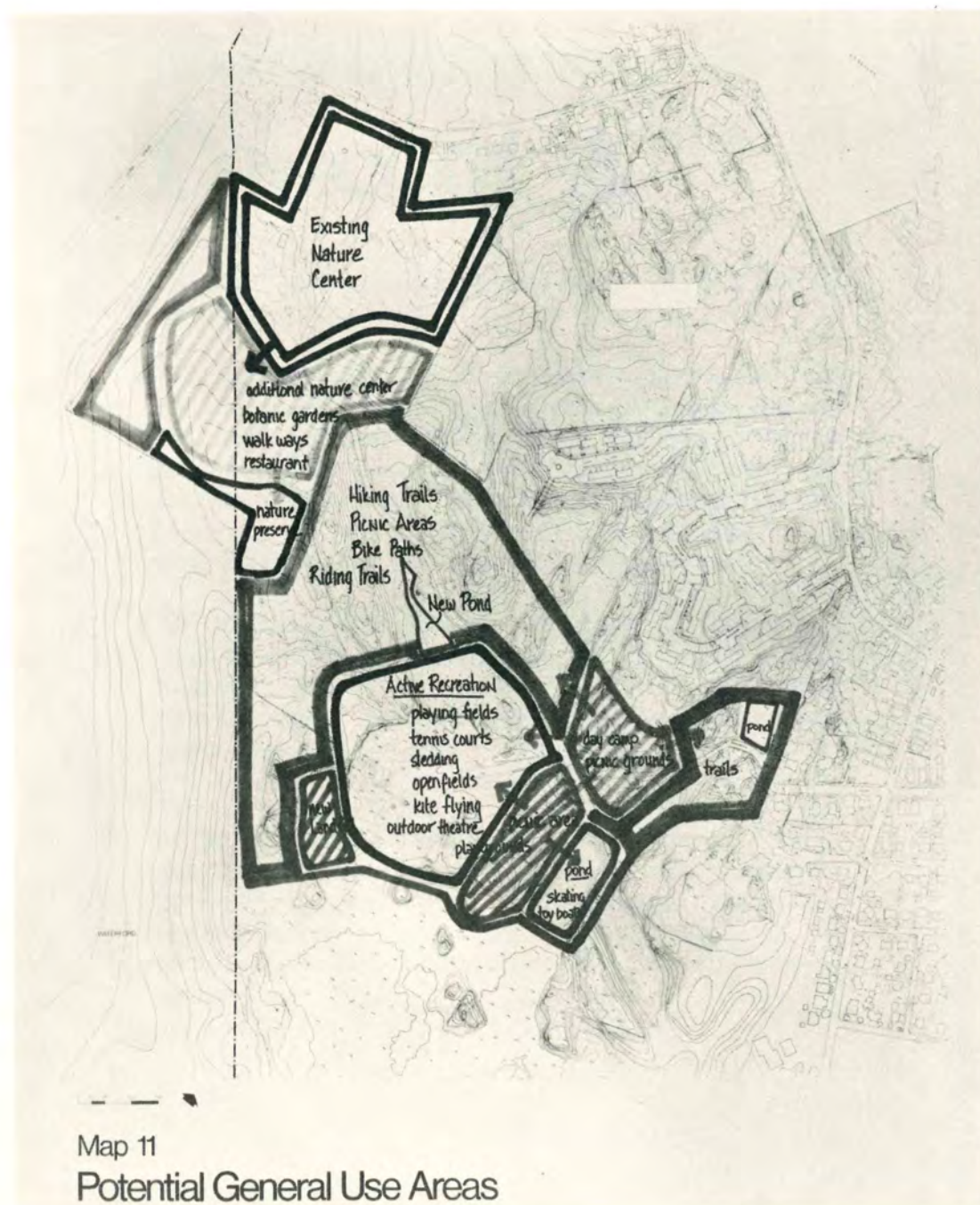
1. The existing zoo and picnic area near Chester Street, and
2. The large, level area created by the landfill (this is an ideal location for ball fields, basketball courts, an outdoor theatre, and other active recreation uses). (See Maps 10 and 11.)

The concept plans presented in this report demonstrate ways in which the park's potential could be realized. The plans vary in cost and complexity and combine inexpensive natural improvements with more intensive (and thus more expensive) active recreation facilities.

In the actual development of the park, the city may wish to incorporate some ideas from both concepts. Either concept would, of course, be staged in its development, so that work on park improvement could be keyed to the availability of funds.

The beauty of the natural ridges and valleys provide a sharp contrast to the stark, barren landfill site. Yet the landfill area offers excellent potential; it could become a large meadow (and active sports area) bordered by a winding stream or lake and framed by the wooded ridges.

The natural features of Bates Woods shape its potential use. While the relatively level landfill area offers a superb location for playing fields, the wooded hillsides and valleys are ideal for hiking trails and scattered picnic areas. The valley south of the zoo is swampy, and should be preserved as a wet area and for nature study.





Concept A

Concept A emphasizes improvements to the natural environment of the park.

This concept recommends that the existing landfill site become a large, open meadow. Softball fields, basketball and volleyball courts, an outdoor theatre and other recreation activities on the meadow would be separated from the main road by a meandering stream. New picnic areas around the meadow's recreation activities would include pavilions for large groups as well as scattered tables and fireplaces.

The recreation meadow would be linked to the zoo by a three-mile trail system, encompassing surfaced walking trails, rugged hiking trails and specially marked nature trails. Other than clearing the woods of underbrush, dead trees, and trash this portion of the park would remain much as it is.

The active recreation in the southern part of Bates Woods would be counterbalanced by an expanded recreation area at the zoo. This area would offer New London residents a different kind of recreation facility, consisting of the zoo, the existing family picnic areas, and a new senior citizen recreation area (including bocci, shuffleboard and horseshoe courts).

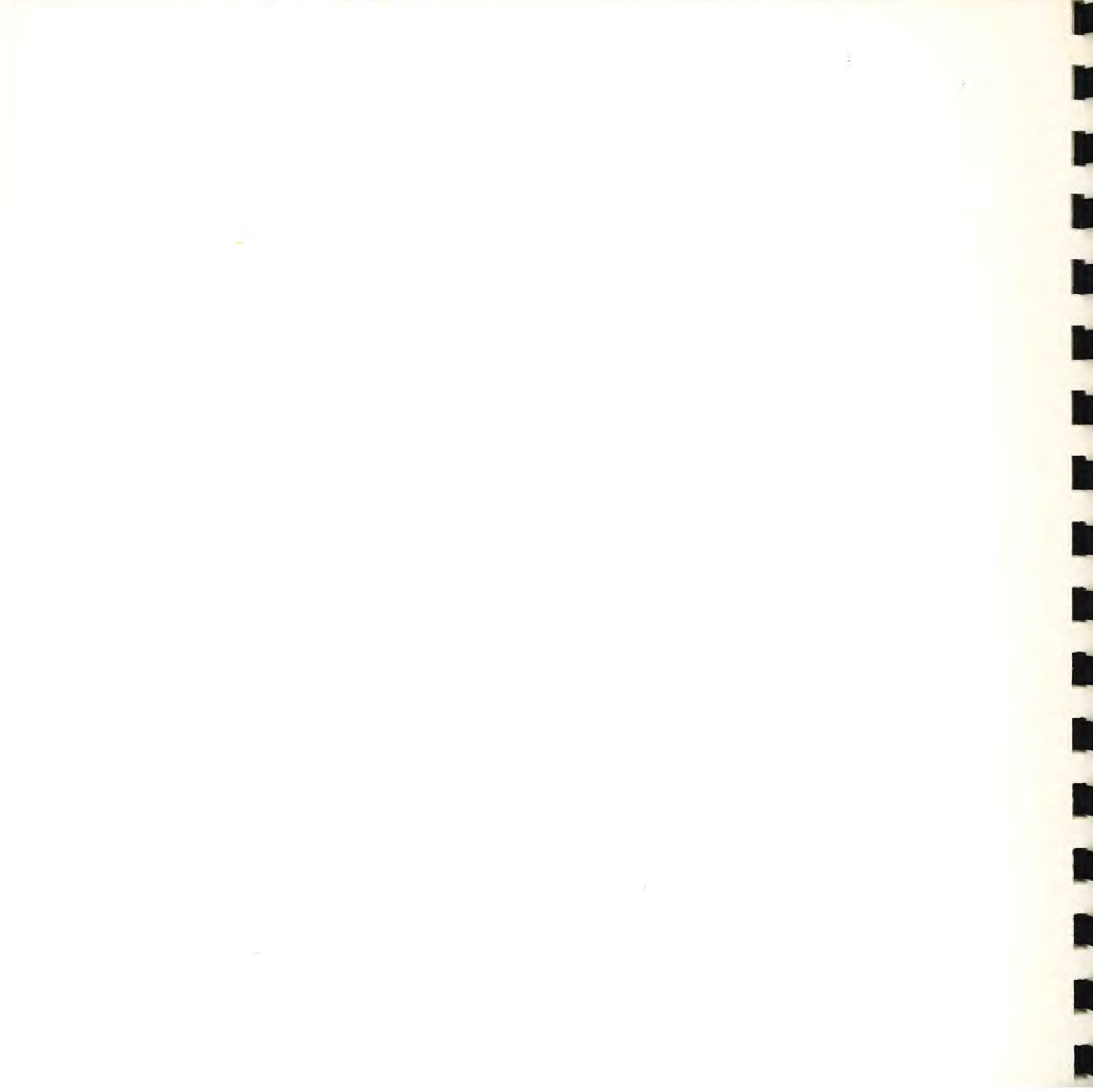


Plan A

A large, open meadow — set in the midst of the scenic ridges and valleys — includes softball fields, basketball courts, and open areas for volleyball, frisbees and kiteflying. An amphitheater overlooking the stream on the meadow's edge provides a place for summer concerts and plays; and then becomes a gentle sledding hill during the snowy months. Small ponds on either side of the meadow provide places for sailing toy boats in summer or ice skating in winter.

Rugged hiking trails climb the ridges overlooking the meadow, while more gentle walking trails traverse the valleys and ring the ponds; these trails can become cross country ski trails in the winter. Both systems lead hikers to the zoo, where a new cafe/concession and senior citizens' garden are located.





Concept B

Concept B proposes more extensive and varied recreation activities, while still preserving the park's natural environment.

The meadow created on the landfill area would be bordered by a new lake, where a paddle boat concession might be located. Other possible recreation activities include tennis courts, ball fields, volley ball and basketball courts, and an outdoor theatre. An equestrian center (encompassing a stable, ring, meadow and a system of riding trails) further expands the park's recreation opportunities in this concept. Group and individual family picnic areas would be located near the new recreation facilities.

Concept B also features a greater expansion of the activities in the northern portion of the park. The nature center could eventually be enlarged to include a botanical garden, in addition to the existing zoo. A formal garden and senior citizen recreation area would replace the existing ball field.

A variety of trail systems (including walking, hiking, and riding trails) would connect the different portions of the park with one another. As in Concept A, recommendations for the natural, forested areas of Bates Woods are generally limited to clearing out the litter, rubbish and heavy underbrush.



Plan B

A new lake separates the large recreation meadow from the main road and the woods beyond. The meadow has tennis and basketball courts, a ball field, open areas and an amphitheater. A paddle boat concession is located on the lake's edge at the foot of the meadow's gently sloping lawn. Picnic areas are scattered among the trees on the hills overlooking the lake.

An equestrian center, with a stable and ring is on the opposite side of the meadow from the lake, while a system of riding trails encircles the park.

Hiking trails and walking paths wander through the valleys and across the rocky ledges to the zoo, botanic garden, picnic areas, cafe, and senior citizen garden at the northern end of the park.





The Zoo

The proposals for improvements at the zoo are based on discussions with Mr. Moran, the zoo's Director.

Both plans recommend additional security around the animal pens, drainage improvements, the possible expansion of the monkey house, and screening and landscaping around the dog pound. Many other improvements have already been initiated by Mr. Moran, and include wheelchair ramps, basic drainage improvements, new animal pens, and construction of a new barn/nature study center.

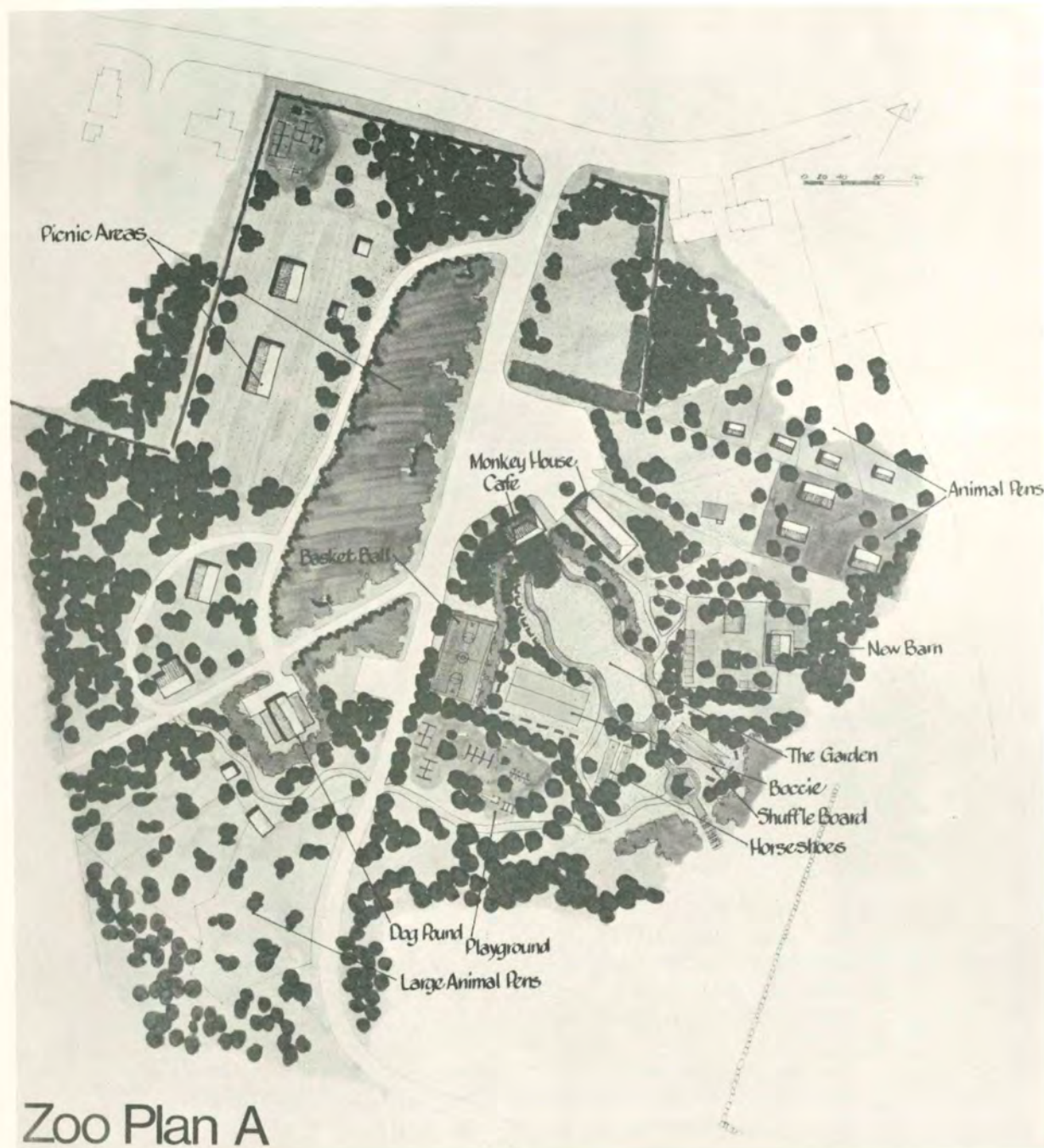
With the construction of new playing fields on the landfill site, it will be possible to phase out the existing softball field at the zoo. This area could then be converted into a senior citizen recreation area (a quieter and therefore more compatible use for this section of the park). Activities might include a formal garden with sitting areas, outdoor chess and checker tables, and game courts (bocci, shuffleboard and horseshoes). A new cafe/concession stand would serve senior citizens, zoo visitors, and picnickers.

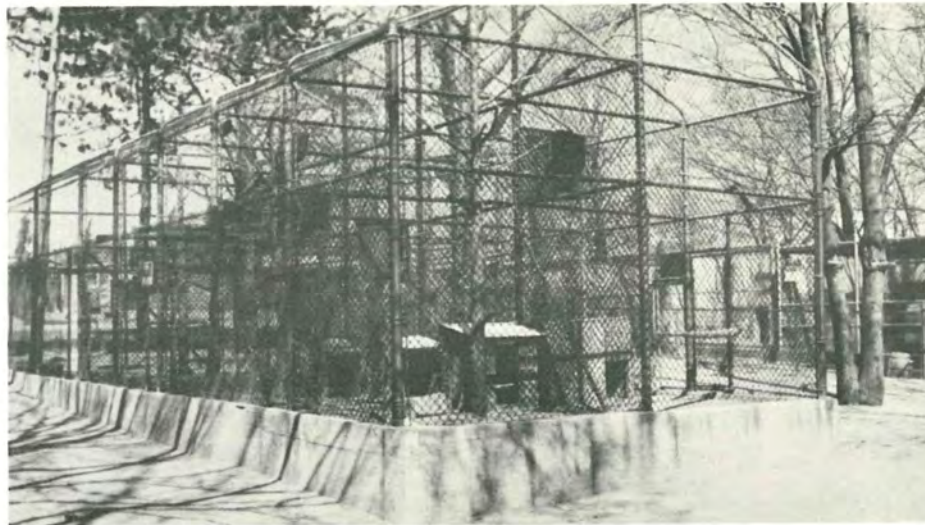


Zoo — Plan A

The cafe and formal garden introduce a new element at the zoo. Senior citizen recreation — including bocci, shuffleboard and horseshoe courts — is provided in this area, in addition to basketball courts and playgrounds for younger residents.

The zoo includes a new nature study barn and a larger monkey house.





Zoo — Plan B

Plan B provides a more formal garden — a series of pools descend from the new cafe to the wood's edge. Checker tables and benches line the walkways which border the green lawns surrounding the pools.

The zoo is expanded by the enlarging of the monkey house and adding a nature study barn. The dog pound is screened from the large animal pens, playgrounds, and picnic areas by new trees and shrubs.

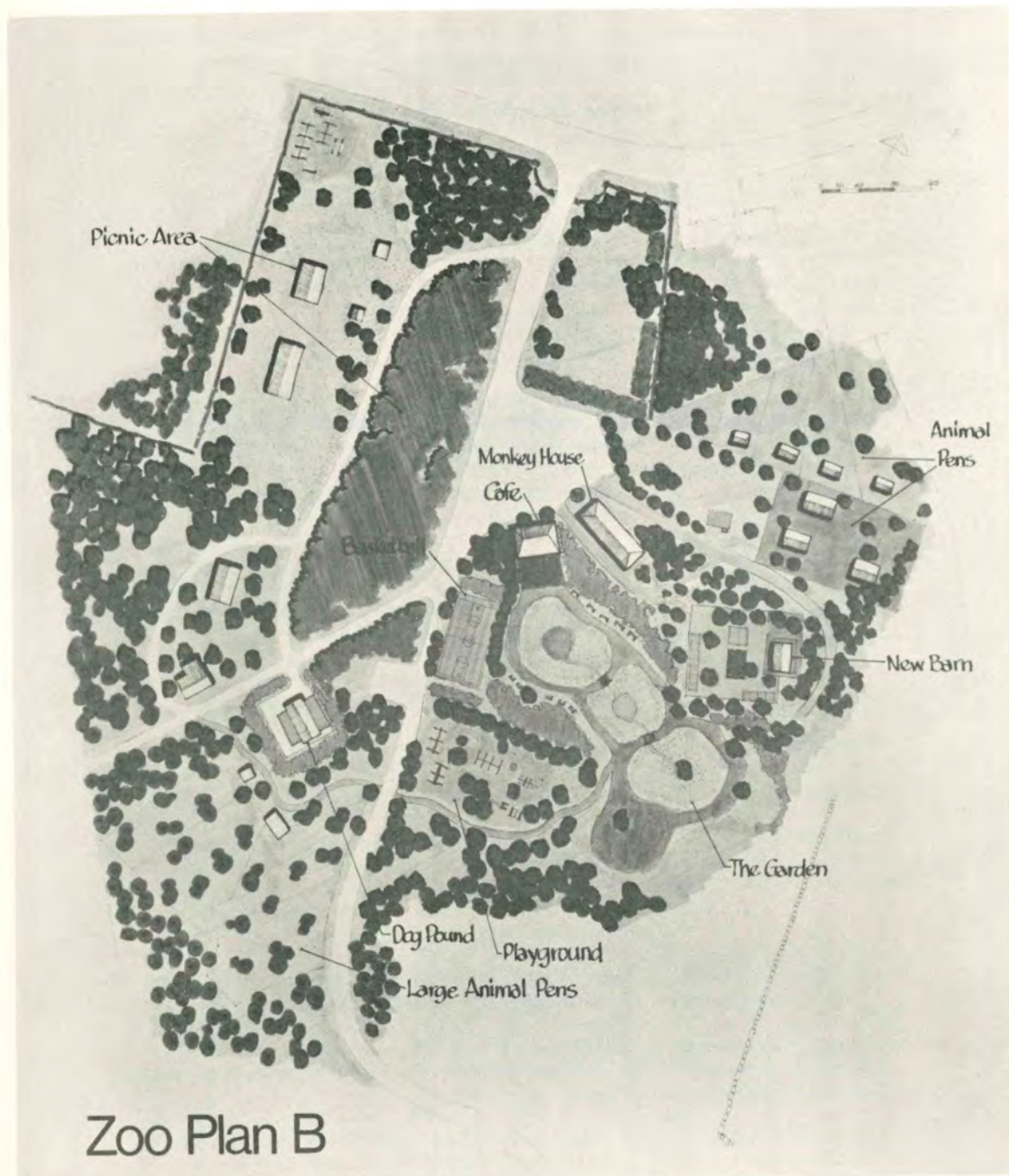


Table 1
BATES WOODS PARK
Existing and Proposed Uses

	Existing	Concept A	Concept B
Size:	85 acres; 75 acres in New London, 10 acres in Waterford	85 acres	85 acres
	Zoo, picnic areas and ball field	Zoo, picnic areas and Senior Citizen Garden	Zoo, picnic areas and Senior Citizen Garden
Monkey house		Possible addition to monkey house	Possible addition to monkey house
Outdoor pens for deer, buffalo, etc. and farm animals		Outdoor pens — security fencing New barn	Outdoor pens — security fencing New barn
3 picnic pavilions, picnic area in pines		3 picnic pavilions, picnic area in pines	3 picnic pavilions, picnic area in pines
2 playgrounds		2 playgrounds	2 playgrounds
1 basketball court		New basketball court	New basketball court
1 softball field		Senior Citizen Garden garden with benches, chess and checker tables, bocci, shuffleboard and horseshoe courts cafe and concession stand for garden and zoo visitors	Senior Citizen Garden garden with benches, chess and checker tables, landscaped walkways, and gazebos. cafe and concession stand for garden and zoo visitors
City dog pound near large animal pens		Screening around dog pound	Screening around dog pound
Drainage problem at zoo and picnic areas		Drainage channels and piping through zoo and picnic areas	Drainage channels and piping through zoo and picnic areas

City of New London Sanitary Landfill	Playing Fields and Recreation	Playing Fields and Recreation
10-12 acres	2 softball fields 2 basketball courts 2 playgrounds 2 volley ball courts Outdoor theatre Stream on edge of fields 2 new parking lots for 85 cars, plus roadside spaces for 80 cars	1 softball field 4 tennis and/or basket- ball courts. Playground and volley- ball court Outdoor theatre New 1½ acre lake with paddle boat concession 2 new parking lots for 85 cars, plus roadside spaces for 80 cars
Natural Woodlands	Woods, Hiking Trails and Picnic Areas	Woods, Hiking Trails and Picnic Areas
50 acres of woods containing overgrown hiking trails and picnic areas, scenic rock outcrops, wet- lands and ponds, and ice skating pond.	New hiking trails and improved existing rails create a 3 mile trail system. 40 picnic tables and 30 fireplaces at new picnic areas near playing fields and beside hiking trails. 2 group picnic pavilions near playing fields.	New hiking trails and improved existing trails create a 2 mile trail system. 35 picnic tables and 25 fireplaces at new picnic areas near playing fields and beside hiking trails. 1 group picnic pavilion near playing fields. Equestrian Center with 1½ miles of trails, stables, ring and meadow. Botanic Garden with pond, greenhouses and parking lot for 20 cars. Ice skating pond cleaned. Skate house rebuilt as concession stand Ponds cleaned and streams channeled to improve drainage and recreation use New 1 acre landfill site



Preliminary Cost Estimates

The total estimated cost of Concept Plan A in current dollars is \$1.4 million, while the cost of Concept Plan B is \$1.9 million. More detailed cost estimates for each concept are found in Tables 2 and 3. Because of the magnitude of the estimated costs, development of the park must be phased over a number of years. Top priority should be given to the conversion of the landfill area into a recreation meadow. Other features of both plans which could or should be activated in the near future include zoo improvements, hiking trails, picnic areas and general site work.

Many of the specialized recreation activities (e.g., the botanic garden, equestrian center, and senior citizen recreation garden) might be considered on an individual basis for possible future development as funds become available.

Table 2
BATES WOODS PARK
CONCEPT A

Preliminary Cost Estimate

1. Clear and Grub	\$ 50,000
2. Landfill and Site Preparation: (cut and fill, topsoil, seeding, trees and shrubs)	280,000
3. Miscellaneous Removal	10,000
4. Ponds and Streams: (new streams and ponds; clean existing ponds; culverts; pedestrian bridges)	60,000
5. Roads: (repair existing roads; build new roads)	40,000
6. Parking Lots: (two lots and roadside spaces totaling 165 new parking spaces)	45,000
7. Drainage, Water and Sewer:	115,000
8. Playing Fields and Recreation Activities: (softball fields with bleachers, basketball courts, volleyball courts, playgrounds, and paths)	100,000
9. Hiking Trails: (clear new trails, improve existing trails; build shelters)	15,000
10. Picnic Areas: (two new group pavilions near playing fields; new outdoor tables and fireplaces)	60,000
11. Senior Citizen Garden: (landscaping and walkways; bocci, shuffleboard and horseshoe courts; checker tables, benches, and gazebo)	45,000

12. Band Shell	45,000
13. Concessions and New Comfort Stations:	70,000
14. Zoo: (additional security and new facilities)	50,000
15. Lighting:	60,000
16. Miscellaneous Equipment: (benches, signs, bike racks, trash receptacles)	80,000
17. Maintenance Shed and Yard:	50,000
Subtotal:	\$1,175,000
Contingencies and Engineering @ 15%:	175,000
TOTAL:	\$1,350,000

Table 3
BATES WOODS PARK
CONCEPT B

Preliminary Cost Estimate

1. Clear and Grub	\$ 45,000
2. Landfill and Site Preparation: (cut and fill, topsoil, seeding, trees and shrubs)	235,000
3. Miscellaneous Removal:	10,000
4. Lakes, Ponds and Streams: (new lake, ponds and streams; clean existing ponds; culverts; pedestrian bridges)	155,000
5. Roads: (repair existing roads, build new roads)	40,000
6. Parking Lots: (two lots and roadside spaces totaling 165 new parking spaces)	45,000
7. Drainage, Water and Sewer:	115,000
8. Playing Fields and Recreation Activities: (softball field with bleachers, tennis and/or basketball courts, playground, volleyball, paddle boats and dock, and paths)	160,000

9. Hiking Trails: (clear new and improve existing trails; build shelters)	10,000
10. Picnic Areas (new group pavilion near playing fields; new outdoor tables and fireplaces)	35,000
11. Senior Citizen Garden: (landscaping, walkways, chess and checker tables, benches, fountains and pools, bridges and gazebos)	75,000
12. Equestrian Center: (bridle paths, stable, ring and meadow)	115,000
13. Botanic Garden: (topsoil, pond, landscaping, paths, greenhouse, parking areas, bridges and gazebos)	220,000
14. Band Shell	45,000
15. Concessions and New Comfort Stations:	70,000
16. Zoo: (additional security and new facilities)	50,000
17. Lighting:	60,000
18. Miscellaneous Equipment: (benches, signs, bike racks, trash receptacles)	80,000
19. Maintenance Shed and Yard:	50,000
Subtotal:	\$1,615,000
Contingencies and Engineering @ 15%:	245,000
TOTAL:	\$1,860,000



Implementation

The proposals for the park fall into three basic categories:

1. Projects which can be accomplished without heavy equipment or vast technical skill, and as a result have relatively low costs. Such projects include improving hiking trails, rubbish clean-up, and the construction of picnic areas or play equipment. These proposals could be carried out by supervised volunteer groups, a city youth conservation corps or 4-H group, and similar programs.
2. Projects which require technical skill, heavy equipment, and in some cases, expensive materials. This category includes the conversion of the landfill, construction of roads and parking lots, and basic site work. This work is essential if the landfill is to be used for recreation. In order to finance these improvements, the city might consider use of federal and state financial assistance.
3. Projects which are relatively complex and expensive, require technical skill, and may require special equipment (e.g., the senior citizen garden, the equestrian center, and the botanic garden. Such projects although not essential to the park's development, may be desirable, and therefore should be considered as funding becomes available.



Conclusion

The concepts offer three important guidelines which should become a framework for future Bates Woods Park development:

1. The preservation of the existing woods, marshes and natural areas;
2. The conversion of the sanitary landfill site into an active recreation area; and
3. The maintenance and encouragement of the zoo and nature center, with expanded recreation opportunities for senior citizens.

Bates Woods Park represents a superb asset for New London. The sympathetic, staged development of this area will provide a broad range of recreational activities that can be of enduring value for many generations.



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